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## Fall nematode sampling considerations

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# Fall nematode sampling considerations

## **Abstract**

As we near the last part of the growing season, there are a few important pieces of information to remember concerning sampling Iowa fields for plant-parasitic nematodes.

## **Disciplines**

Agriculture | Plant Pathology

# INTEGRATED CROP MANAGEMENT

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## Plant Diseases

### Fall nematode sampling considerations

by Greg Tylka, Department of Plant Pathology

As we near the last part of the growing season, there are a few important pieces of information to remember concerning sampling Iowa fields for plant-parasitic nematodes.

#### Corn nematodes

There are numerous species of nematodes that can feed upon and cause damage to corn in Iowa.

To assess whether nematode feeding is responsible for damage to a growing corn crop, it is important to collect soil and root samples when nematode population densities are near or at their peak.

For all but one species, it is recommended that samples be collected at mid-season because this is when greatest numbers of the nematodes will be detected. The exception to this is for needle nematodes, which are restricted to sandy soils and migrate downward into the soil profile during the warmest part of the growing season. Needle nematodes are more easily detected in soil samples collected in the beginning or near the end of the growing season.



Needle nematode damage to corn roots. (Greg Tylka)

When sampling to diagnose possible nematode damage to corn, soil samples should consist of 15 to 20 1-inch-diameter soil cores that are up to 12 inches deep. The individual cores should be taken in a zig-zag or M-shaped pattern from an area no larger than 20 acres. Multiple soil samples may need to be collected from larger fields. The individual soil cores should be combined and thoroughly mixed for each sample. Root samples from throughout the sampled area also should be submitted along with a composite soil sample.

As we are nearing the end of the growing season, it is not recommended that soil samples be collected for analysis for the presence of corn nematodes anymore unless a specific concern about needle nematode damage exists.

#### Soybean cyst nematode

Soybean cyst nematode (SCN) is a widespread and serious pest of soybeans throughout Iowa and much of the Midwest. But many fields harbor infestations that are unknown to those who farm the land because obvious

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aboveground symptoms may not become apparent for many years. The key to successful management of the soybean cyst nematode is identification of infestations when population densities are low. Fall is an ideal time to collect soil samples for detection of the soybean cyst nematode. Samples should be collected from fields in which soybeans will be grown in 2006.

Soil samples should consist of 15 to 20 1-inch-diameter soil cores, 6 to 8 inches in total depth, collected in a zig-zag or M-shaped pattern from an area of no more than 20 acres. For larger fields, collect several samples representing different parts of the field. All of the soil cores should be combined and mixed thoroughly to comprise the soil sample.

Samples can be processed by qualified private soil testing laboratories that offer soybean cyst nematode analysis as a service or by the Iowa State University Plant Disease Clinic, 323 Bessey Hall, Iowa State University, Ames, IA 50011. The fee is \$15 per sample for the analysis at the ISU Plant Disease Clinic.

For more information about SCN and how to diagnose infestations, contact your county extension office for printed publications on SCN biology, scouting,



SCN soil sampling in corn stubble. (Greg Tylka)

management, and SCN-resistant soybean varieties or visit [www.soybeancyst.info](http://www.soybeancyst.info) on the Web.

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*Greg Tylka is a professor of plant pathology with extension and research responsibilities in management of plant-parasitic nematodes.*



## Insects and Mites

# Soybean aphids attack: Does it pay to spray low populations?

by Matt O'Neal and Kevin Johnson, Department of Entomology

**A**fter a relatively quiet June and July, soybean aphid populations are building in certain parts of the state. Although data may not be present, soybean aphids are likely to be present across the state. Aphid populations greater than 250 have been reported in Iowa. However, populations are spotty with heavily infested fields near those with much lower populations. Brian Lang, Iowa State University Extension (ISUE) field crop specialist in Winneshiek County, reports fields with several thousand aphids per plant, with neighboring fields below threshold. Factors that can put soybeans at risk for soybean aphid outbreaks include:

- Late planting
- K-deficiency
- Drought

Winged aphids are becoming more common, suggesting that fields planted later may be at risk. If soybeans were planted later than the surrounding fields, these dispersing soybean aphids could colonize these younger plants, putting them at risk for an aphid outbreak.

Evidence from Chris DiFonzo, field crop entomologist at Michigan State University, indicates that soybean plants suffering from a K-deficiency are more at risk for soybean aphid outbreaks. The amino acids aphids require for growth differs between K-deficient and sufficient plants, with more essential amino acids found in K-deficient plants. Although the soybean plant that is K-deficient may appear yellow and stunted, it is a more nutritious food source than a healthy plant.